

CLAIMS:

1. A nozzle assembly for directing flow of a fluid across one or more semiconductor device cutting blades, comprising:
 - one or more nozzles configured to protrude toward a cutting blade for cutting a semiconductor device; and
 - 5 - a channel formed in each of the nozzles, the channel being configured to at least partially surround the cutting blade, so as to simultaneously direct flow of a fluid onto the cutting edge of the cutting blade and onto the sides of the cutting blade.
2. The nozzle assembly of claim 1 wherein the nozzles are affixed to and in fluid communication with a pipe member, so as to direct flow of the fluid from the pipe member through the one or more channels.
- 10 3. The nozzle assembly of claim 1 wherein the nozzle is oriented generally toward the semiconductor device while the cutting blade is dicing the semiconductor device.
- 15 4. The nozzle assembly of claim 1 or 2, wherein a plurality of nozzles are present and configured to protrude toward a cutting blade for cutting a semiconductor device, each nozzle having a channel that is configured to at least partially surround the cutting blade, so as to simultaneously direct flow of a fluid onto the cutting edge of the cutting blade and onto the sides of the cutting blade.
- 20 5. A dicing apparatus comprising at least one cutting blade to which cooling fluid is provided through a nozzle, wherein the nozzle as claimed in any of the preceding claims is used.
- 25 6. A dicing apparatus as claimed in claim 5, comprising a plurality of cutting blades positioned parallel to each other, each cutting blade being provided with a nozzle directed towards the cutting blade for the provision of the cooling fluid.

7. A dicing apparatus as claimed in claim 6, wherein the cutting blades are mutually separated by spacers.
8. Use of the sawing apparatus as claimed in any of the claims 5 to 7 for the dicing of semiconductor devices.
9. Use as claimed in claim 8, wherein the semiconductor devices is packaged including a leadframe and an encapsulation, and wherein the dicing dices through the encapsulation and the leadframe.